

REMARKS

Reconsideration and allowance are respectfully requested in light of the above amendments and the following remarks.

Claims 1-23 remain pending in the application, with claims 7-10 and 19 being withdrawn from consideration as directed to non-elected subject matter. Claim 1 has been amended to recite that the amorphous film is made of a different material than the substrate and has a dislocation density which is less than or equal to $10^4/\text{cm}^2$.

It is submitted that claims 1-6, 11-18 and 20-23 are allowable for the reasons set forth in the Response filed March 23, 2004 and also because the above-noted features added to claim 1 depart further from the teachings of the applied art.

For the reasons stated in the Response filed March 24, 2004, it is submitted that Nakamura teaches away from any modification of Tanaka and Tokunaga that would achieve the claimed invention. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path that was taken by the applicant (see *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994)). And if a reference teaches away from its combination with another source, there is no suggestion to combine the references (see *Tec Air, Inc. v. Denso Manufacturing Michigan Inc.*, 192 F.3d 1353, 1360, 52 USPQ2d 1294, 1298 (Fed. Cir. 1999)). In short, Nakamura

teaches away from the claimed feature of introducing atomic, molecular, or chemical beams onto the surface of a substrate at an incident angle of not more than 40 degrees with respect to the substrate surface. Instead of the claimed feature, Nakamura teaches that 90 degrees is the optimal angle for epitaxial growth. Proceeding contrary to accepted wisdom in the art is evidence of nonobviousness.

As noted in the previous Response, a CVD film-forming technique is quite different in principle from an MBE film forming technique, so that the operation condition and the apparatus of the CVD film forming technique are also quite different from those of the MBE film forming technique. For example, with the CVD technique, only gas sources are required, but with the MBE technique, a beam source (or plural beam sources) is required in addition to gas sources, so that the MBE apparatus structure becomes more complicated than the CVD apparatus structure. Then, with the CVD technique, the raw material gases are non-directionally supplied onto a substrate, but with the MBE technique, the molecular beam or the atomic beam from the beam source is directionally supplied onto a substrate, so that the operability of the MBE technique is more complicated than that of the CVD technique.

In the use of the MBE technique for realizing epitaxial growth, conventionally, the molecular beam or the atomic beam is supplied substantially perpendicularly onto the substrate. This is because if the beam is supplied at the slant, for example, at a lower angle of not more than 40 degrees, the epitaxial growth can not be realized and some voids are created in the resultant film.

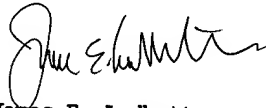
In the present claimed invention, in contrast, since the opening formed in the amorphous film is provided, and the beam supply is performed into the opening, even though the beam supply is performed at lower angle of not more than 40 degrees, the epitaxial growth can be realized. In this case, surprisingly, the epitaxial growth can be realized between the film and the substrate which are made of respective different materials and at much lower dislocation density without voids. In the ELO technique of CVD, the dislocation density of the resultant film can be reduced to some degree, but can be formed only on the substrate made of the same material as the one of the resultant film.

In this way, the present invention is not drawn out from the conventional ELO technique of CVD, but originally considered with regard to the MBE technique, and is innovative.

In view of the points made in the Response filed March 24, 2004 and the above points, it is submitted that this application is in condition for allowance and a notice to that effect is respectfully solicited.

If any issues remain which may best be resolved through a telephone communication, the Examiner is requested to telephone the undersigned at the local Washington, D.C. telephone number listed below.

Respectfully submitted,



James E. Ledbetter
Registration No. 28,732

Date: April 28, 2004

JEL/att

Attorney Docket No. JEL 31015

STEVENS DAVIS, MILLER & MOSHER, L.L.P.

1615 L Street, N.W., Suite 850

P.O. Box 34387

Washington, D.C. 20043-4387

Telephone: (202) 785-0100

Facsimile: (202) 408-5200